BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE

#23
06/04/03

Applicant : DANIEL et al.

Serial No. : 09/462,387

Examiner : SHOSHO

Filed : APRIL 19, 2000

Group Art Unit : 1714

For : SILICA-CONTAINING RUBBER COMPOSITION VULCANIZABLE WITH SULFUR.

DECLARATION UNDER 37 C. F. R. § 1.132

I, Gerard LABAUZE hereby declare as follows :

1. I have been employed by Manufacture Française des Pneumatiques Michelin since 1979. A copy of my résumé is attached hereto as Exhibit A.

2. My responsibilities for the past 13 years at Michelin have included my active involvement in the development and production of vulcanizable rubber compositions.

3. I am a co-inventor of the subject matter claimed in U. S. Serial No. 09/462,387 (the '387 application) and am thus familiar with the subject matter disclosed and claimed therein.

4. The '387 application discloses, inter alia, a rubber composition vulcanizable with sulfur and usable for a tire tread comprising: a) at least one polymer selected from the group consisting of diene polymers, olefin/diene monomer copolymers and halogenated iso-olefin/para-alkylstyrene copolymers; b) silica as filler; c) at least a sulphured silane enabling the bond between the silica and the polymer; d) at least a substitutes guanidine, wherein the composition satisfies at least one of the following features (i) and/or (ii):
   (i) it comprises a diene polymer containing at least a terminal amino group of an aliphatic or cycloaliphatic amine which is itself bound at the chain end , the polymer being thus devoid of alkoxysilane group and silanol group;
   (ii) it comprises at least one free aliphatic or cycloaliphatic amine.

5. To illustrate the improvement achieved with the claimed invention, I assert that a virtual control composition 17' in example 4 of instant Application which would contain 4.5 mmol of aliphatic amine instead of 7.1 mmol (so just the molar amount of aliphatic amine in composition 19), would inevitably imply an increase in the hysteretic losses, because a decrease in the concentration of any covering agent (be it of the silane type, an aromatic amine such as guanidine or an aliphatic amine or whatever) always means a decrease of the coating of silica particles, which of course means a decrease of the shield effect played by the covering agent and implies an increase of interactions between the hydroxyl groups of the silica (that are more free to interact with each other) and, as a consequence of this increase of interactions, this virtual composition 17' would undoubtedly exhibit higher hysteretic losses than those of composition 17, hence the improved effect of composition 19 compared to this virtual composition 17'.

I further declare that all statements made herein of my own knowledge are true and that all statements based on information and belief are believed to be true ; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date : 23/04/ 2003

Gerard LABAUZE

EXHIBIT A

R E S U M E

- Gerard LABAUZE born 25/08/51.

- Graduated from ENSCP PARIS - (Doctor in chemistry in 1978/ Engineer in chemistry in 1975),

- Employed by Manufacture Française des Pneumatiques MICHELIN in Clermont-Ferrand (France) since 1979.

- My current position is since 1990 developer of rubber compositions useful in the tire industry.

Date :23/04/2003

Gerard LABAUZE